Question:

Can Acetone/Nail polish remover break down/completely dissolve an artificial nail? Does it make a difference if it is in a closed container?

Hypothesis:

I think the artificial nail will dissolve faster in the closed container because the fumes from the nail polish remover are trapped in an enclosed space.

Materials:

* 2 bowls/containers (one has to have a lid and they have to be the same size)
* 2 artificial nail tips. They have to be the same size (acrylic nails)
* Nail polish remover or acetone
* Stopwatch
* Camera

Procedure:

1. Fill your first bowl up full enough that when you drop the nail in it will float but it will be completely submerged.
2. Drop in the nail…
3. Every 5 minutes check it, and take a picture…
4. When it is completely dissolved or it feels like gel or like glue, take a picture, check your time and record the data…
5. Repeat step 1-4 except this time, your container has an open lid…

Variables:

Dependant: The artificial nail after it is submerged in the nail polish remover.

Independent: The lids that go on the bowls…when to put them on…

Constant: The bowl size…and the size of the artificial nail after it covered in the nail polish remover.

Results:

Test 1: No lid

After the first 5 minutes, the nail was squishy and almost curled around the edges. At 10 minutes it was laying almost flat on the bottom of the bowl. 5 minutes after that, the sides of the nail were breaking down. The nail was completely dissolved and had a gel like quality after 20 minutes.

Test 2: Lid

The results were about the same. I don’t think it affected the rate of dissolving any by putting the lid on the container. After checking them every 5 minutes, the results were almost identical.

Background Information:

The most common kind of nail polish remover contains acetone. Acetone is very effective but is harsh on the skin and on nails. It damages artificial nails. The main ingredients in nail polish remover are; acetone, ethyl acetate (or butyl acetate), and alcohol. It is highly flammable. Some toothpastes removes nail polish. Nail polish remover is actually 60% acetone. It can also dissolve a lot of common plastics.

Works Cited:

* Panse, Sonal. "What Is Nail Polish Remover?" *WiseGEEK: Clear Answers for Common Questions*. 22 Oct. 2010. Web. 31 Dec. 2010. <http://www.wisegeek.com/what-is-nail-polish-remover.htm>.
* "Answers.com - What Products aside from Nail Polish Remover Will Remove Nail Polish." *WikiAnswers - The Q&A Wiki*. Web. 31 Dec. 2010. <http://wiki.answers.com/Q/What\_products\_aside\_from\_nail\_polish\_remover\_will\_remove\_nail\_polish>.
* "Nail Polish." *Wikipedia, the Free Encyclopedia*. Web. 31 Dec. 2010. <http://en.wikipedia.org/wiki/Nail\_polish#Nail\_polish\_remover>.



Pictures:

Second Test: 20 min.



Second Test: 15 min.



Second Test: 10 min.



Second Test: 5 min.



First Test: 20 min.

First Test: 15 min.

First Test: 10 min.

First Test: 5 min.